

## ***Rulison Monitoring Results***

### **Noble Energy Well BM 35-32A**

**Site:** Gas well Battlement Mesa 35-32A (drilling), API # 05-045-10919. (Pad 35 is near the Rulison, CO, Site)

**Operator:** Noble Energy, Incorporated

**Sampler:** U.S. Department of Energy, Office of Legacy Management, Grand Junction, CO.

**Date of Sampling Event:** August 15, 2007 and August 20, 2007

Samples of drilling mud and make-up water were collected from well BM 35-32A during drilling operations. Details concerning this well are listed in Table 1. A description of the samples collected is found in Table 2.

*Table 1. Well BM 35-32A, API # 05-045-10919*

Sample Point	Location	Sea Level Elevation (feet)	Perforation Interval (feet)	Distance (Feet) from		Subsurface		Distance from GZ (miles)	Comment
				N section Line (FNL)	E section Line (FEL)	Latitude	Longitude		
Surface Collection	NENW S35 T7S R95W	9236	---	754	2105	39.398821	-107.966606	1.07	NAD 83; plan
Subsurface Location	SWNE S35 T7S R95W	NA	NA	1393	1997	39.397067	-107.962575	0.95	Planned bottom

NA: Not available

The subsurface elevation is at the midpoint of the perforation interval.

**Link** to Colorado Oil and Gas Conservation Commission information.

**Well:** BM 35-32A <http://oil-gas.state.co.us/cogis/FacilityDetail.asp?facid=04510919&type=WELL>

Table 2. Sample Description

Sample No.	Matrix	Sample Description
NDC 644	Suspended Solids	Grab drilling-mud liquid sample (suspended fine solids and additives in water); collected at shaker box. <sup>1</sup>
NDC 645	Water	Grab water sample (make-up water); collected at holding tank spigot.
NDC 646	Suspended Solids	Grab drilling-mud liquid sample (suspended fine solids and additives in water); collected at shaker box by URS. <sup>2</sup>

<sup>1</sup>The drill bit was at 7,395 feet below ground surface (bgs) when the mud sample was taken. The depth of the mud sample collected is 7,384 feet bgs, corrected for travel time.

<sup>2</sup>The drill bit was at 9,200 feet bgs.

The samples were submitted to Paragon Analytics in Fort Collins, Colorado for the determination of tritium. The results are listed in Tables 3-5.

Table 3. Water Sample NDC 644 Results, Paragon Analytics

**RESULTS REPORT**

**RIN: 07081112**

**Site: Rulison Site**

**Location: 35-32A**

**Ticket Number: NDC 644**

**Report Date: 3/4/2008**

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Standard <sup>1</sup>
Tritium	pCi/L	8/15/2007	N001	-31.8	U		#	20,000

<sup>1</sup>USEPA Primary Radionuclide Drinking Water Standard.

Table 4. Water Sample NDC 645 Results, Paragon Analytics

**RESULTS REPORT**

**RIN: 07081112**

**Site: Rulison Site**

**Location: 35-32A**

**Ticket Number: NDC 645**

**Report Date: 3/4/2008**

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Standard <sup>1</sup>
Tritium	pCi/L	8/15/2007	N001	-53.8	U		#	20,000

<sup>1</sup>USEPA Primary Radionuclide Drinking Water Standard.

Table 5. Water Sample NDC 646 Results, Paragon Analytics

**RESULTS REPORT**

**RIN: 07081112**

**Site: Rulison Site**

**Location: 35-32A**

**Ticket Number: NDC 646**

**Report Date: 3/4/2008**

Parameter	Units	Sample		Result	Qualifiers			Standard <sup>1</sup>
		Date	ID		Lab	Data	QA	
Tritium	pCi/L	8/20/2007	N001	37	U		#	20,000

<sup>1</sup>USEPA Primary Radionuclide Drinking Water Standard.

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

**LAB QUALIFIERS:**

U Analytical result below detection limit.

**DATA QUALIFIERS:**

F Low flow sampling method used.

G Possible grout contamination, pH > 9.

J Estimated value.

L Less than 3 bore volumes purged prior to sampling.

Q Qualitative result due to sampling technique.

R Unusable result.

U Parameter analyzed for but was not detected.

X Location is undefined.

**QA QUALIFIER:**

# Validated at Level 1 according to quality assurance guidelines.